CLAIMS

1. Method for determining characteristics of components of a satellite communication channel, comprising:

generating a first pseudo noise signal PN(t);

modulating said clean carrier signal f (t) with said first pseudo noise signal PN(t) to generate said spreaded clean carrier signal s(t);

transmitting said spreaded clean carrier signal s(t) through said communication channel at a first predetermined level;

receiving a receive signal s'(t) corresponding to said spreaded clean carrier signal s(t) after having travelled through said communication channel;

correlating said receive signal s'(t) with said first pseudo noise signal PN(t) to generate said despreaded carrier signal f'(t);

determining the group delay of the communication channel at the selected frequency of the clean carrier signal f (t) on the basis of the time delay between the first pseudo noise signal PN (t) and said receive signal s' (t); and/or

determining the amplitude response of the communication channel at the selected frequency of the clean carrier signal f (t) on the basis of the correlation peak between the first pseudo noise signal PN(t) and said receive signal s' (t).

2. Method according to claim 1, wherein said first predetermined level is adjusted by a predetermined threshold below the level of a transmitted payload signal of an adjacent satellite communication channel.

3. Method according to claim 1, wherein said first predetermined level of said spreaded clean carrier signal s(t) is adjusted by the following steps:

a) setting a preliminary level which corresponds to a lower limit in the communication channel;

b) processing said despreaded carrier signal f ' (t) in order to determine actual characteristics of said despreaded carrier signal f ' (t)

c) determining the deviation between the actual characteristics and predetermined desired characteristics of said despreaded carrier signal f',(t);

d. 1)if the deviation is above a predetermined deviation: increasing the preliminary level by an incrementation parameter and repeating steps b) to d. 1;

d.2) otherwise allocate the actual preliminary level to said first predetermined level.

4. Apparatus for determining characteristics of components of a satellite communication channel, comprising:

first pseudo noise signal generating means (9) for generating a pseudo noise signal PN(t), said clean carrier signal f(t) is modulated with said first pseudo noise signal PN(t) to generate said spreaded clean carrier signal s(t);

transmitting means (11, 12, 13) for transmitting said spreaded clean carrier signal s(t) through said communication channel at a first predetermined level;

receiving means (13, 14) for receiving a receive signal s'(t) corresponding to said spreaded clean carrier signal s(t) after having travelled through said communication channel;

first correlating means (14) for correlating said receive signal s'(t) with said pseudo noise signal PN(t) to generate said despreaded carrier signal f'(t);

means for determining the group delay of the communication channel on the basis of the time delay between the first pseudo noise signal PN(t) and said receive signal s'(t); and/or

means for determining the amplitude response of the communication channel at the selected frequency of the clean carrier signal f (t) on the basis of the correlation peak between the first pseudo noise signal PN (t) and said receive signal s'(t).

5. Apparatus according to claim 4, wherein said first predetermined level is adjusted by a predetermined threshold below the level of a transmitted payload signal of an adjacent satellite communication channel.

6. Apparatus according to claim 4, further comprising for adjusting said first predetermined level of said spreaded clean carrier signal:

setting means for setting a preliminary level which corresponds to a lower limit in the communication channel;

processing means for processing said despreaded carrier signal f'(t) in order to determine actual characteristics of said despreaded carrier signal f'(t) and for determining the deviation between the actual characteristics and predetermined desired characteristics of said despreaded carrier signal f';

increasing means for increasing the preliminary level by an incrementation parameter if the deviation is above a predetermined deviation;

allocation means for allocating the actual preliminary level to said first predetermined level if the deviation is below or equal a predetermined deviation.